Sedation by Propofol for neonatal intubation: a randomised controlled trial

Background:
Tracheal intubation is a frequently performed, life-saving procedure in neonatal care. Without sedation, intubation can cause pain and in preterm infants, is associated with an increased incidence of intracranial haemorrhage. This study investigated the effectiveness of propofol versus a commonly used standard regimen of morphine and midazolam (M&M), to facilitate neonatal intubation.

Results:
There were no significant differences in the demographics in the preterm cohort of the 2 intervention groups (M&M or Propofol) in median gestational age (GA) at birth, mean GA at intubation, median Weight at birth (BW) or mean Weight at intubation. In the 6 term infants (3 M&M, 3 Propofol), the Weight at intubation was significantly lower in the propofol group (Table 1).

The Propofol group measured significantly less time for drug preparation (mean difference (MD) = 4:06mins; 95%CI 2:54-5:18mins; p<0.0001), time to inject drug (median difference (MedD) = 17sec; 95%CI 2.5 to 31.6sec; p=0.023), time to wake up post procedure (MedD = 16:08mins; 95%CI 10:36-22:02mins; p<0.0001) (Figure 1), total procedure time (MD = 7:49mins; 95%CI 4:58-11:36mins; p<0.0001) (Figure 2), total number of attempts at intubation (MedD = 2; 95%CI 1.52-2.47; p<0.0001) and in the number of traumatic intubations (p=0.029), compared to the M&M group.

Conclusions:
The use of propofol was more efficient and resulted in less trauma during neonatal intubation, compared to morphine and midazolam. Limited data on long term neurodevelopmental follow up of the preterm cohorts did not show any statistically significant differences between the 2 intervention groups.